

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A system for communicating information on a network having pieces of electronic equipment connected to the network by cables having a plurality of wires therein, said system comprising:

~~a central module including a receiver; and~~
~~_____ a remote module connected to each piece of equipment, each of said remote modules including a transmitter for transmitting low frequency multi-bit information to the receiver over the cables without disturbing normal network high frequency data communication carried by wires in the cables; and~~
~~_____ wherein said receiver in the central module detects the multi-bit information sent from each piece of equipment on the network.~~

_____ a central module having a receiver therein;

_____ a first piece of equipment;

_____ a first cable having wires therein connected between the central module and the first piece of equipment;

_____ a first remote module utilized in generating a variable impedance across at least a pair of wires in the first cable to define a first multi-bit signal associated with the first piece of equipment;

_____ a second piece of equipment;

a second cable having wires therein connected between the central module and the second piece of equipment; and

a second remote module utilized in generating a variable impedance across at least a pair of wires in the second cable to define a second multi-bit signal associated with the second piece of equipment.

2. (original) The system of claim 1 wherein the multi-bit information is transmitted from the remote module to the receiver over the same data wires in the cable that normally carry high frequency data communications over the network to the electronic equipment.

3. (original) The system of claim 1 wherein each remote module transmits a unique signal related to the piece of equipment to which each module is associated.

4. (original) The system of claim 3 wherein said central module further comprises:

a monitor for decoding the unique signal transmitted from the remote modules thereby identifying the equipment associated therewith.

5. (original) The system of claim 1 wherein the remote modules are devices attached to computer equipment.

6. (original) The system of claim 1 wherein the central module identifies the existence and location of the equipment without power being applied to the equipment.

7. (Currently amended) The system as defined in Claim 1 wherein the central module further comprises a power modulator for modulating power from the power source and coupling a modulated power signal over the cables to the remote modules, and

wherein the remote module further comprises a power demodulator for demodulating the modulated power signal to detect information sent from the central module;

whereby the remote modules can operate on power from the central module without the electronic equipment being powered, and further that information can be bi-directionally transmitted between the central module and remote modules.

8. (original) The system of claim 1 wherein the central module detects the absence of a proper signal from a remote module associated with a piece of equipment on the network and blocks network information from being communicated to that piece of equipment.

9. (original) The system of claim 1 which further comprises:
a database having information that identifies each piece of equipment and its location on the network, along with an identification signal for each piece of equipment provided by its associated remote module; and

wherein the system periodically updates the database as a function of the transmitted identification signals to thereby track the identity and location of the equipment on the network.

10. (original) The system of claim 1 wherein the central module is used to limit access to selected programs as a function of the signals transmitted by the remote modules.

11. (original) The system as defined in Claim 2 wherein the bit rate of the multi-bit information is less than about 1% of the bit-rate of the high frequency data communications.

12. (original) The system as defined in Claim 1 wherein the central module further includes a first power source for supplying power to the remote modules so that information can be transmitted to the central module even if the electronic equipment is powered off.

13. (original) The system as defined in Claim 2 wherein the network is an Ethernet network.

14. (original) The system as defined in Claim 2 wherein the frequency of the high frequency data is at about 10 Mbits/sec and the bit rate of the modulated signal is not more than 100 kb/sec.

15. (new) The system of claim 1 wherein the first and second cables are twisted pair Ethernet cables.

16. (new) A system for communicating information on a network, said system comprising:

a central module including a receiver;

a first piece of equipment;

a first cable having a plurality of wires therein, at least a pair of wires in said first cable connecting the first piece of equipment to the central module through a first loop;

a first remote module connected to the first piece of equipment;

said first remote module including a transmitter utilized in transmitting first low-frequency multi-bit information to the receiver over wires in the first cable without disturbing normal network high frequency data communication carried by wires in the first cable;

a second piece of equipment;

a second remote module connected to the second piece of equipment;

a second cable having a plurality of wires therein, at least a pair of wires in said second cable connecting the second piece of equipment to the central module through a second loop; said second remote module including a second transmitter utilized in transmitting second low-frequency multi-bit information to the receiver over at least a pair of wires in the second cable without disturbing normal network high frequency data communication carried by wires in the second cable; and

wherein said receiver in the central module detects the multi-bit information transmitted over the first and second cables from the first and second pieces of equipment on the network.

17. (new) The system as defined in Claim 16 wherein:

the first transmitter is electrically coupled to the first loop and is utilized in modulating an electrical characteristic of the first loop to define the first low frequency multi-bit information associated with the first piece of equipment; and

the second transmitter is electrically coupled to the second loop and is utilized in modulating an electrical characteristic of the second loop to define the second low frequency multi-bit information associated with the second piece of equipment.

18. (new) The system of claim 16 wherein the first and second cables are twisted pair Ethernet cables.